PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 25933	**FOR FURTHER ACTION**	See Form PCT/IPEA/416
International application No. PCT/EP2004/008718	International filing date *(day/month/year)* 03.08.2004	Priority date *(day/month/year)* 12.09.2003
International Patent Classification (IPC) or national classification and IPC B30B9/16, B30B9/26, B30B11/24, B01D29/35, B01D35/30		
Applicant NEW PRESSING TECHNOLOGY DI BABBINI MARIA...		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 1 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) ., containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the opinion
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
23.06.2005	07.12.2005
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Baradat, J-L Telephone No. +31 70 340-3503

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/008718

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages	
1-9	as originally filed
Claims, Numbers	
2-7	as originally filed
1	received on 25.11.2005 with letter of 22.11.2005
Drawings, Sheets	
1/7-7/7	as originally filed

   ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-7
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-7
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-7
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (SEPARATE SHEET)

International application No.

PCT/EP2004/008718

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following document:

D1 : EP 0 358 837 A (BABBINI &; C SAS FLLI) 21 March 1990 (1990-03-21)

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document):
A screw press for pressing fibrous material, in particular sugar beet pulp, comprising:

- at least one pair of helical elements (2) disposed mutually parallel and side by side, each of said helical elements (2) comprising at least one helix (2) disposed about a rotary shaft (1) which extends along a predetermined axial direction;
- a perforated walled filtering cage (3) supported at least lowerly by a series of equidistant hoops (15, 16) and enclosing said pair of helical elements (2) as an exact fit (see drawings);
- for feeding the fibrous material to the press, a loading hopper (see figure 1) fixed to the hoops (15, 16) supporting the cage (3);
- for exit of the pressed material, a discharge opening (9) positioned in proximity to the end of the press (1) with respect to the material advancement direction;
- a collection sump (recognizable on figure 1) positioned externally to said filtering cage (3), to collect the liquid component of the pressed fibrous material.

The subject-matter of claim 1 differs from this known press in that said filtering cage (5) presents an upper part and a lower part each supported by upper and lower hoops (13, 14), the upper part being of modular structure having a distance between the axes of each module (M) which is constant and is a sub-multiple of, or equal to, the dimension of the loading hopper (8) measured along said predetermined axial direction, each module (M) comprising at least two upper hoops (13), said loading hopper (8) being shiftable by its replacing one or more modules (M) of the filtering cage (5).

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as follows: the geometry (length) of the screw press of D1 cannot be easily adapted to the material to be fed in accordance with its water content, all this resulting in a premature deterioration of the press if over-dimensioned (see page 3, lines 10-15 of the application).

The solution to this problem proposed in claim 1 of the present application **is considered as involving an inventive step** (Article 33(3) PCT) for the following reasons:
the solution according to the characterizing portion of claim 1 cannot be found in the available prior art documents within the field of liquid extracting presses, and it is not suggested by the available prior art.

Claims 2-7 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

The subject-matter of claims 1-7 may be applied in the screw press liquid extracting industry.

CLAIMS (95)

1. A screw press (1) for pressing fibrous material, in particular sugar beet pulp, comprising:

- at least one pair of helical elements (20, 30) disposed mutually parallel and side by side, each of said helical elements (20, 30) comprising at least one helix (22, 23, 32, 33) disposed about a rotary shaft (21, 31) which extends along a predetermined axial direction (X-X, X'-X');
- a perforated walled filtering cage (5) supported at least lowerly by a series of equidistant hoops (13, 14) and enclosing said pair of helical elements (20, 30) as an exact fit;
- for feeding the fibrous material to the press, a loading hopper (8) fixed to the hoops (13, 14) supporting the cage (5);
- for exit of the pressed material, a discharge opening (9) positioned in proximity to the end of the press (1) with respect to the material advancement direction;
- a collection sump (10) positioned externally to said filtering cage (4), to collect the liquid component of the pressed fibrous material;

characterised in that

said filtering cage (5) presents an upper part and a lower part each supported by upper and lower hoops (13, 14), the upper part being of modular structure having a distance between the axes of each module (M) which is constant and is a sub-multiple of, or equal to, the dimension of the loading hopper (8) measured along said predetermined axial direction, each module (M) comprising at least two upper hoops (13), said loading hopper (8) being shiftable by its replacing one or more modules (M) of the filtering cage (5).